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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/735,656	12/16/2003	James T. Croyle	8200.793	2849

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Liniak, Berenato & White  
Ste. 240  
6550 Rock Spring Drive  
Bethesda, MD 20817

EXAMINER

AMAYA, CARLOS DAVID

ART UNIT	PAPER NUMBER
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2836

DATE MAILED: 12/08/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No. 10/735,656	Applicant(s) CROYLE, JAMES T.	
	Examiner Carlos Amaya	Art Unit 2836	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 19 September 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1,3,4 and 8-15 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,3,4 and 8-15 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### DETAILED ACTION

1. This communication is responsive to amendments filed on filed 09/19/2006.

### ***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1, 3-4, 8-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Choi (US 4,882,665) in view of Bullwinkel (2005/0012737).

With respect to claim 1 Choi discloses a pulse discharge apparatus (See abstract) comprising: an electrical load (Load Figure 1); an electrical power source (Supply P); and a plurality of pulse discharge switch modules connected in parallel with one another (Power supply branches 20a to 20n); each of said plurality of pulse discharge switch modules including: at least one capacitor (Capacitors 24) for storing an electrical energy; a semiconductor high-power switch (Discharging thyristor 26, since this switch is used to generate pulsed power it is assumed that this is a high power switch) having an input connected in series to said at least one capacitor for allowing said stored electrical energy to be transferred from said at least one capacitor to said load (Figure 1); and a semiconductor low-power switch (Charging thyristor 22, since this

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switch is used to charge the capacitors it is assumed that this is a low-power switch) having an input connected in series to said at least one capacitor for allowing charging supply from said electrical power source charge said at least one capacitor (Thyristor 22 allows Capacitor 22 to be charged with power from supply P); and a module trigger selector (control unit 40 figure 3 and control unit 50 figure 5) operatively coupled to each of said plurality of said pulse discharge switch modules (col. 4 lines 52-58); wherein said high-power switch and said low-power switch are connected to the same terminal of said at least one capacitor (Figure 1 shows Thyristor 26 and 22 serially connected with capacitor 24).

However, Choi does not disclose expressly that the module trigger selector is provided for independently and selectively controlling each of said plurality of said pulse discharge switch modules in order to selectively operate a selected number of said plurality of said pulse discharge switch modules.

Bullwinkel discloses a liquid crystal display projector comprising a processor 28 for independently and selectively controlling the brightness of the light sources see abstract.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have combined the teaching of Bullwinkel with the invention of Choi to independently and selectively controlling the control units of Choi to independently and selectively control the pulsed discharged switch modules.

The suggestion or motivation for doing so would have been to provide control of individual components to further enhance the reliability of the system.

With respect to claim 3 Choi in view of Bullwindel discloses the pulse discharge apparatus as defined in claim 1, wherein said plurality of said pulse discharge switch modules are substantially identical to each other Choi (From Figure 1 one can see that the branches 20a to 20n are similar).

With respect to claim 4 Choi in view of Bullwindel discloses the pulse discharge apparatus as defined in claim 1, wherein each of said plurality of said pulse discharge switch modules includes a plurality of said capacitors connected in series or in parallel with one another (Figure 1 shows a plurality of capacitors connected in parallel with one another).

With respect to claim 8 Choi in view of Bullwindel discloses the pulse discharge apparatus as defined in claim 1, further including a human interface device provided for controlling said module trigger selector (Control unit 50 of Figure 5 with operator input/output devices, Column 6 lines 38-42).

With respect to claim 9 Choi in view of Bullwindel discloses the pulse discharge apparatus as defined in claim 1, wherein said low-power switch of each of said plurality of said pulse discharge switch modules includes a semiconductor-controlled rectifier (Column 4 lines 6-9, See also abstract).

With respect to claim 10 Choi in view of Bullwindel discloses the pulse discharge apparatus as defined in claim 1, wherein said high-power switch of said at least one pulse discharge switch module includes a semiconductor-controlled rectifier (Column 4 lines 6-9, See also abstract).

With respect to claim 11 Choi in view of Bullwindel discloses the pulse discharge apparatus as defined in claim 10, wherein said high-power switch of each of said plurality of said pulse discharge switch modules further includes a diode connected in parallel to said semiconductor-controlled rectifier (Figure 1 Diodes 28 is connected in parallel with discharging switches 26 of branches 20a through 20n).

With respect to claim 12 Choi in view of Bullwindel discloses the pulse discharge apparatus as defined in claim 1, wherein said pulse discharge apparatus is a magnetic pulse welding machine (Choi discloses that the invention could use to supply pulses of electrical energy to loads such as arc welders and resistive welders; also Figure 1 shows and inductive load).

With respect to claim 13 Choi in view of Bullwindel discloses the pulse discharge apparatus as defined in claim 12, wherein said electrical load is an inductive coil of said magnetic pulse welding machine (Figure 1 shows an inductive load L, this load could represent the coil of a welding machines as disclosed by Choi).

With respect to claim 14 Choi in view of Bullwindel discloses the pulse discharge apparatus as defined in claim 1, wherein said electrical power source provides a charging current to said at least one capacitor (Source P through charging thyristor 22 provide a charging current to the Capacitor 24).

With respect to claim 15 Choi discloses a pulse discharge apparatus comprising: an electrical load; a D.C. electrical power source (Column 3 lines 26-29), a plurality of substantially identical pulse discharge switch modules connected in parallel with one another (Branches 20a to 20n); each of said pulse discharge switch modules including:

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a capacitor for storing an electrical energy (Capacitor 24), a semiconductor high-power switch (Thyristor 26) having an input connected in series to said capacitor for allowing said stored electrical energy to be transferred from said capacitor to said load, said high-power switch including a semiconductor-controlled rectifier and a diode connected in parallel to said semiconductor-controlled rectifier (Discharging Thyristor 26 parallel diode 28 figure 1 are used to supply energy from capacitor 24 to the load ); a semiconductor low-power switch (Thyristor 22) having an input connected in series to said capacitor for allowing charging supply from said electrical power source charge said capacitor, said low-power switch including a semiconductor-controlled rectifier (Thyristor 22 charges capacitor 24 from the power source); said high-power switch and said low-power switch are connected to the same terminal of said capacitor (Figure 1 shows the two switches connected to the same terminal of capacitor 24); a module trigger selector (Control unit 40 and 50) electrically coupled to each of said plurality of said pulse discharge switch modules; and a human interface device provided for controlling said module trigger selector (Control unit 50 of Figure 5 with operator input/output devices, Column 6 lines 38-42).

However, Choi does not disclose expressly that the module trigger selector is provided for independently and selectively controlling each of said plurality of said pulse discharge switch modules in order to selectively operate a selected number of said plurality of said pulse discharge switch modules.

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Bullwinkel discloses a liquid crystal display projector comprising a processor 28 for independently and selectively controlling the brightness of the light sources, see abstract.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have combined the teaching of Bullwinkel with the invention of Choi to independently and selectively controlling the control units of Choi to independently and selectively control the pulsed discharged switch modules.

The suggestion or motivation for doing so would have been to provide control of individual components to further enhance the reliability of the system.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Carlos Amaya whose telephone number is (571) 272-8941. The examiner can normally be reached on M-F 8-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian Sircus can be reached on (571) 272-2800. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.



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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

CA

*Stephen W. Jackson*  
12-5-06

STEPHEN W. JACKSON  
PRIMARY EXAMINER